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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/767,577

01/29/2004

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EXAMINER

WASHINGTON, JAMARES

ART UNIT

PAPER NUMBER

2609

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/767,577	Applicant(s) KRABbenhOFT, UWE-JENS	
	Examiner Jamares Washington	Art Unit 2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>See Attached 1/29/04 10/16/6.</u> | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 4, and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Christopher J. Edge (US 20020167528 A1).

Regarding claim 1, Edge discloses a method of transforming color values of a first device-dependent color space into color values of a second device-dependent color space, to effect a substantially identical visual impression of colors reproduced in the first and second color spaces (“...a first set of device-dependent coordinates (values) are converted to device-independent coordinates (11). The device-independent coordinates are then converted to a second set of device-dependent coordinates (13). The process of Fig. 1, for instance, can be performed on all of the pixels in a color image so that the output of a second imaging device, e.g., a display, looks visually equivalent to the output of a first imaging device, e.g., a printer” at paragraph [32] and Fig. 1. The “coordinates” mentioned above represent values or color components of a “color space” describing the way colors can be represented.), the method which comprises:

providing a first color profile characterizing the first color space (“A color profile is a data structure that describes the color characteristics of a particular device. Color profiles typically include color information such as information describing how the device converts from device-independent coordinates to device-dependent coordinates” at paragraph [69]. “...an image may be comprised of image data that includes a large collection of CMYK coordinates. Each of these can be converted to device-independent coordinates (11) and then transformed (12)” at paragraph [36].) and providing a second color profile characterizing the second color space (“Each transformed coordinate may

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then be converted to form a second set of device-dependent coordinates (13),” at paragraph [36].”The second set of device-dependent coordinates, for example, may be associated with a second imaging device” at paragraph [37]. The conversions mentioned above produce new “color profiles”.);

wherein the first and second color profiles specify an association between the color values of the first and second device-dependent color spaces and the color values of a device-independent color space (“...white point correction, the chromatic correction, or both, can be stored in a color profile” at paragraph [69]. “The white point correction matrix $M_{sub.1}$ can be applied to correct errors between a theoretical white point of a display device (first or second profile) and the empirical white point, (e.g. a visual white point)” at paragraph [66] “...the $M_{sub.2}$ matrix can correct errors between the theoretical values of saturated colors and empirically or visually measured values of saturated colors” at paragraph [66]. This correction associates and corrects the white point values and chromaticity of a device-dependent color space and device-independent color space with respect to known theoretical values of a device-independent color space.);

wherein a white point of the first device-dependent color space, a white point of the second device-dependent color space, and a white point of the device-independent color space are described by device-independent white point values (“...a method includes converting device-dependent coordinates that define a color in a printing device to device-independent coordinates, and adjusting the device-independent coordinates using a white point correction...” at paragraph [13].);

determining relative color values of the device-independent color space from the color values of the first device-dependent color space by way of the association specified in the first color profile (“...a first set of device-dependent coordinates are converted to device-independent coordinates (11).” at paragraph [32]);

converting the relative color values into absolute color values in a ratio corresponding to a ratio of the values of the white point of the first device-dependent color space and the white point of the device-independent color space (“The device-independent coordinates are then transformed.” at paragraph [32] “Fig. 3 is a flow diagram of a general process that can be implemented to transform device-independent coordinates. As shown, a white point is corrected (31)...” at paragraph [34]. “By way of example, the white point of a display device can be corrected (31)...” at paragraph [39].);

determining chromatically adapted color values from the absolute color values by way of a chromatic adaptation transformation (“Having determined and documented the corrections to the...chromaticities, the transformation can be repeated by inputting the correction values into a mathematical framework...” at paragraph [49]. “One implementation of the transformation uses matrix algebra...(M.sub.2).” at paragraph [50].)

converting the chromatically adapted color values into relative chromatically adapted color values in a ratio corresponding to a ratio of the values of the white point of the device-independent color space and the white point of the second device-dependent color space (“The transformed device-independent coordinates are then converted to a second set of device-dependent coordinates (13)” at paragraph [32];

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determining color values of the second device-dependent color space from the relative chromatically adapted color values by way of the association specified in the second color profile “The second set of device-dependent coordinates, for example, may be associated with a second imaging device...the second set of device-dependent coordinates may be a collection of RGB coordinates. Each RGB coordinate can be generated from the transformed coordinates” at paragraph [37].)

Regarding claim 4, Edge discloses the method as rejected in claim 1 above comprising the use of color profiles which are formatted in accordance with the ICC specification (“...after performing the mathematical transformation from XYZ to X’Y’Z’ outlined below, a new profile such as an ICC profile can be created to allow CMYK images rendered with the corrected ICC profile to look the same...” at paragraph [49]).

Regarding claim 5, Edge discloses the method as rejected in claim 4 above comprising leaving unchanged the associations contained in the color profiles between the color values of the device-dependent color space and the color values of the device-independent color space (“...a new profile such as an ICC profile can be created...” at paragraph [49]. The creation of a new profile would “save” the association between the color spaces for future use).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edge (20020167528) in combination with Graham D. Finlayson et al (IS&T/SPIE Electronic Imaging, SPIE Vol. 4300, January 2001).

Regarding claim 2, Edge teaches the method as rejected in claim 1 above, which comprises carrying out the chromatic adaptation transformation by way of a “fixed” matrix (“If the RGB chromaticities are fixed, the chromaticity matrix $M_{sub.c}$ is a fixed matrix” at paragraph [60]).

However, Edge fails to teach the chromatic adaptation transformations discussed in claim 1 as being a Bradford matrix.

Finlayson et al teaches, in the same field of endeavor of accurate color duplication (“reproducing the appearance of image colors” at page 1 paragraph 3), a chromatic adaptation transformation by way of a Bradford matrix (“Bradford Chromatic Adaptation Transform (BFD CAT)” page 2, numeral 2).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Bradford matrix as the “fixed” matrix described in the chromatic adaptation transformation of Edge’s color correction techniques because, at the time, the Bradford matrix was the most widely used and newest transform giving the most accurate results in color reproduction.

Regarding claim 3, Edge teaches the method, including carrying out the chromatic adaptation transformation by way of a fixed matrix, as rejected in claim 2 above.

However, Edge fails to teach carrying out the chromatic adaptation transformation in accordance with a von Kries matrix.

Finlayson et al teaches a chromatic adaptation transformation carried out in accordance with a von Kries matrix (“The Von Kries Chromatic Adaptation Transform” at page 2 numeral 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a Von Kries matrix as a matrix described in the chromatic adaptation transformation of Edge’s color correction techniques because the Von Kries transformation assumes that the chromatic adaptation is an independent gain control of the cone responses of the human visual system, and the scaling is based on the cone responses of illuminants. This will allow for very accurate color matching results under varying illumination.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jamares Washington whose telephone number is (571) 270-1585. The examiner can normally be reached on Monday thru Friday: 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on (571) 272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


BRIAN WERNER
SUPERVISORY PATENT EXAMINER

Jamares Washington
Assistant Examiner
Art Unit 2112

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01/16/07